

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
District Department of the Environment

Natural Resources Administration  
Water Quality Division



**Washington Aqueduct (NPDES Permit #DC0000019)  
Georgetown Reservoir Sedimentation Basin Discharge Inspection Report**

**Location:** Washington Aqueduct, Georgetown Reservoir

5900 MacArthur Boulevard, NW, Washington D.C. 20016

**Date of Inspection:** December 1, 2014 and December 2, 2014

**Name of Inspector(s):** David Pilat, Isaac Kelley

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**Contacts:** Thomas Jacobus (General Manager) and John W. Peterson (Superintendent)

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**Inspection Narrative:**

On Monday, December 1, 2014 at 9:51 AM, District Department of the Environment (DDOE) Water Quality Division (WQD) inspectors David Pilat and Isaac Kelley arrived at the Washington Aqueduct Georgetown Reservoir facility to observe the permitted discharge from Sedimentation Basin 2. The discharge was authorized by the EPA Region 3 via a November 10, 2014 authorization for bypass of the Georgetown Sedimentation Basins through Outfalls 003 and 004. The basin discharge was authorized as a one-time event which necessary to drain the basin and the sediments within the basin to make repairs to the dredging system. Upon arrival, we met with John W. Peterson, Superintendent, who escorted us to the basin to observe the discharge, followed by observations at the two outfalls from Basin 2.

Mr. Peterson indicated that Washington Aqueduct personnel were collecting samples of the discharge during the event – A total of three sets of samples were to be collected. Mr. Peterson was not aware of the analyses to be conducted on the samples collected from the discharge. Mr. Peterson also did not have an estimate of the volume of sediment at the bottom of the basin, but instructed us that his engineering staff would provide an estimate they had prepared. DDOE WQD staff has to-date not received this estimate. Mr. Peterson further indicated that the reason the sediment was being discharged to the Potomac via Outfalls 003 and 004 was due to prohibitive costs and the negative public perception that would be generated by the traffic created by the need to haul away the sediment. Mr. Peterson specifically stated the need for “500 trucks hauling sediment out of here.”

During the course of the inspection DDOE WQD inspectors made the following observations:

- Observations at Basin 2
  - Basin 2 is 1,200 feet long by 740 feet wide for a total surface area of 888,000 square feet, or 20 acres. Mr. Peterson stated the total volume of basin was over 200 million gallons of water.

- Basin 2 discharges to two outfalls (Outfall 003 and Outfall 004), which discharge directly to the Potomac River.
- I inspected the water in the basin to be clear and relatively free of sediments at the surface. The draining of the basin began at 5:15 PM on Sunday, November 30th. As of my time on site the basin has been draining for an estimated 19 hours and the water level in the basin was observed to have dropped an estimated 10 feet.
- The valve on the discharge gate was observed to be about 10% open and a large volume of water could be heard flowing through the basin discharge point.
- Outfall 003 Observations
  - The observed discharge at Outfall 003 was clear water discharging at a large volume. The volume of discharge was of concern; however, DDOE Inspectors nor facility personnel had a means to measure the discharge rate and determine the volume of the discharge.
- Outfall 004 Observations
  - The observed discharge at Outfall 004 was similar to that of Outfall 003. A large volume of water was observed discharging. The flow from this outfall was observed to have eroded a wide (15 feet) channel, to a depth of an estimated 2 feet from the outfall to the Potomac River.

On Tuesday, December 2, 2014 at 8:30 AM, DDOE WQD Inspector David Pilat received an email from the facility stating that the basin was completely drained and that cleaning of residual sediments was going to be conducted. Inspectors David Pilat and Isaac Kelley mobilized to the site and arrived at Basin 2 at or around 1:15 PM. During the course of the inspection DDOE WQD inspectors made the following observations.

- Observations at Basin 2
  - Upon arrival at Basin 2 DDOE WQD Inspectors observed the basin completely empty with tire tracks visible from two front end loaders that were being used to push sediments from the floor of the basin into a central drainage channel. Water flow along the draining channel would flush the sediment out of the basin and through the two outfalls.
  - The areas of Basin 2, which had not been cleaned prior to our arrival was observed to have between 6 to 8 inches of sediments or residual solids on the floor of the basin. Based on this observation, the estimated volume of sediment in the basin was calculated to be between 440,000 and 591,900 cubic feet of sediment or residual solids.
  - Mr. Peterson stated that up to four feet of flocculent (suspended sediments) existed above this sediment layer, which was discharged through the outfalls during the draining process.
  - Mr. Peterson stated that the cleaning would continue, and that all remaining sediments would be pushed to the central drainage channel and flushed through the outfalls. Following this step, a fire hose observed at location will be used to wash down the rest of the residual sediments.

- The valve on the discharge gate was observed to be in the fully open position.
- Outfall 003 Observations
  - Upon arrival at Outfall 003 DDOE WQD Inspectors immediately observed a large mass of sediment in the discharge channel leading to the Potomac River.
  - The observed “high water” mark as indicated by a thick layer of sediment was at a level several feet higher than the observed discharge level the previous day.
  - Thick heavy sediment loads were observed covering the entire bank leading to the river. Sediment was also observed covering the outfall point and the entire banks including the rocks and grass adjacent. At some locations the sediment was observed overflowing the banks of the small discharge channel.
  - The water flowing out of the outfall and through the channel was very dark, viscous, and highly turbid; clearly carrying a very large sediment load.
  - A silty plume was observed extending 10 feet into the Potomac River.
  - The observed discharge water did not integrate with the river water and was observed to have a viscous heavy appearance, which did not mix with the surrounding water.
- Outfall 004 Observations
  - Upon arrival at Outfall 004, again it was immediately apparent that a very large surge of highly turbid water had flown through the channel.
  - The observed water mark at this outfall, again indicated by a sediment line, was at a stage much higher than the flow was observed at the previous day.
  - Thick sediments were observed covering the outfall, rocks, vegetation, and the banks of the channel toward the river.
  - The eroded flow channel observed the previous day was submerged (due to overnight rains raising the river level), but could be seen through the water to be wider than previously noted the previous day, indicating the continued large flow observed the prior day continued.